General Surgery

IV Cannula

Gauge	Colour Code	Ext.Dia. mm	Length mm	Flow Rate ml/min	Indications
14G	Orange	2.1	45	240	Trauma, surgical procedures
16G	Grey	1.8	45	180	Trauma, surgical procedures
18G	Green	1.3	32/45	90	Trauma, quick blood transfusion
20G	Pink	1.1	32	60	Normal IV or blood transfusion
22G	Blue	0.9	25	36	Children, older adults
24G	Yellow	0.7	19	20	Neonates, children, old elderly
26G	Violet	0.6	19	13	Neonates

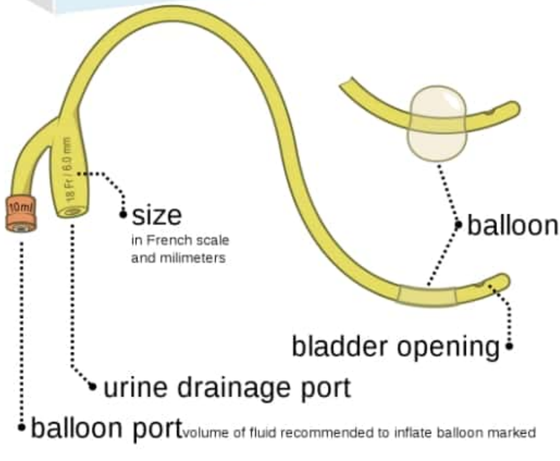
- White: 17 G
- 25 G- Spinal Needle
- Orange, Grey, Green: Resuscitation

Ryle's Tube

- Estimation of length: from tragus to tip of nose to xiphisternum
- Position of patient: Sitting with neck flexed (Never Supine and neck extended)
- Importance of the markings on the Ryle's Tube:
  - 1st mark = 45 cm in at level of GE Junction
  - 2nd mark = 50 cm in at level of body of stomach
  - 3rd mark = 60 cm in at level of pylorus/antrum
  - 4th mark= 70cm in at level of 1st part of Duodenum
- Terminal 9.5 cm has eye (For suction/irrigation)

Foley's Catheter

- French is the measure of outer Circumference (NOT diameter)
- **Colours:**
  - Red- 18 Fr
  - Orange- 16 Fr
- Obstructed foley's mx:
  - Overinflation and rupture (1st line)
  - USG guided suprapubic rupture of bulb (Best Mx)

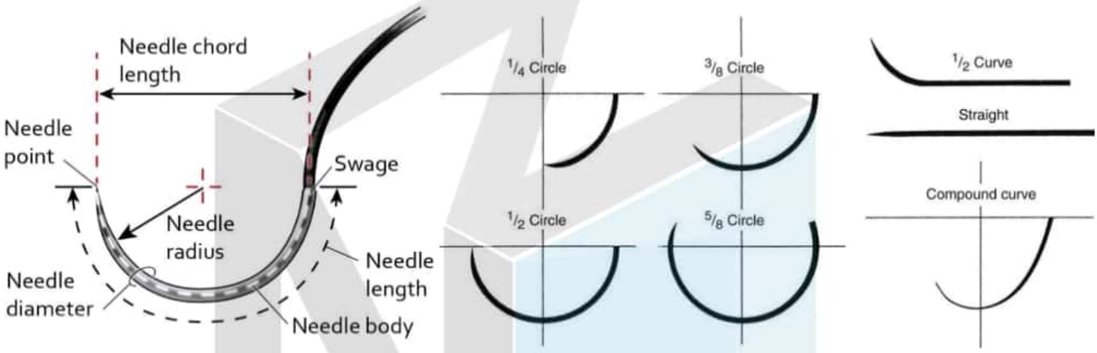


Harmonic Scalpel

- Based on the concept of sound energy used to disrupt the hydrogen bond linkages.
- Can cut & seal.
- Lower jaw is active jaw (vibrating b/w 11000 hz and 55000hz) -piezoelectric jaw.
- Upper jaw is inactive and Teflon jaw.

Sutures

- Can be braided or monofilament
- As the gauge of suture increases, the thickness also increases
- Selection of right sutures is the most important aspect of any surgery.



COMMON USAGE OF ATRUMATIC NEEDLES

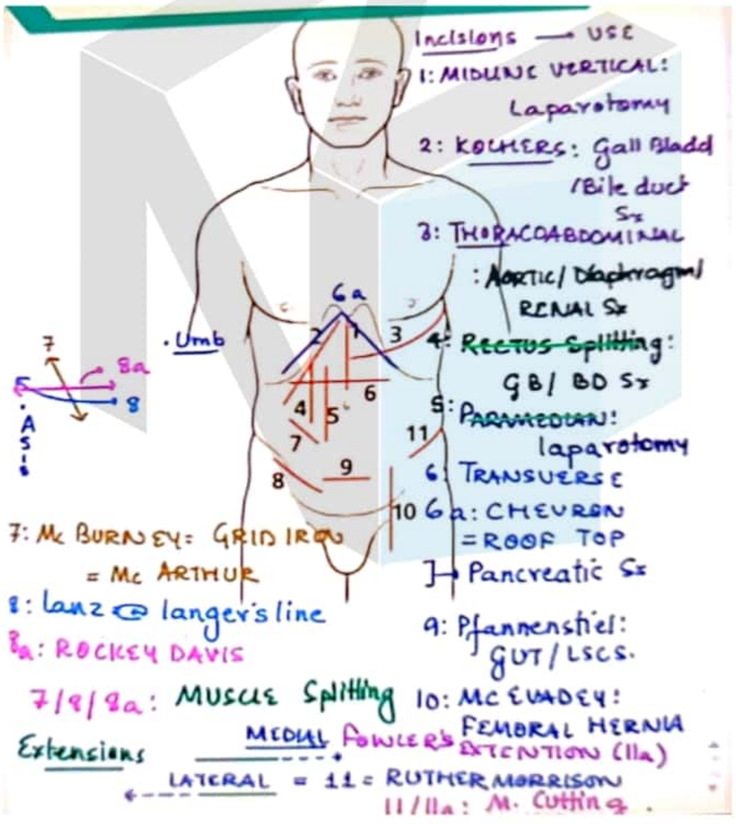
NEEDLE TYPES	COMMON USE
TAPER POINT	Soft tissue closure below skin surfaces, dura, fascia, GI, muscle, nerve, pleura, vessels
BLUNT POINT	Friable tissues, spleen, liver, kidneys, cervix
CUTTING EDGE	Ligaments, tendons, calcified or fibrous tissue, thoracic, plastic, Ob & Gyn, scar tissue
REVERSE CUTTING	Skin closure, retention suture, S/C, ligaments or fibrous tissue, mucosa
TAPER CUT	Bronchus, calcified tissues, nasal & oral cavity, periosteum, trachea, uterus, vessels
SPATULATED CURVED	Ophthalmic surgery for muscle and retinal repair, eyelid suturing

- Polydiaxone (PDS): Abdominal closure
- Monocryl (Polyglecaprone): Subcutaneous suturing
- Chromic catgut: Surface surgeries
- Ethilon (polyamide): Skin Apposition
- Proline (Polypropylene): Vascular surgery

- Silk (Sutupak): Ligation or fixation of drain
- Polygalactin 910 (Vicryl)- Reabsorbs in 60-90 days
- Vicryl Rapide is absorbed in 7-10 days
- Vicryl + is tricosalan coated
- Port- No. 1 Vicryl – used for port closures

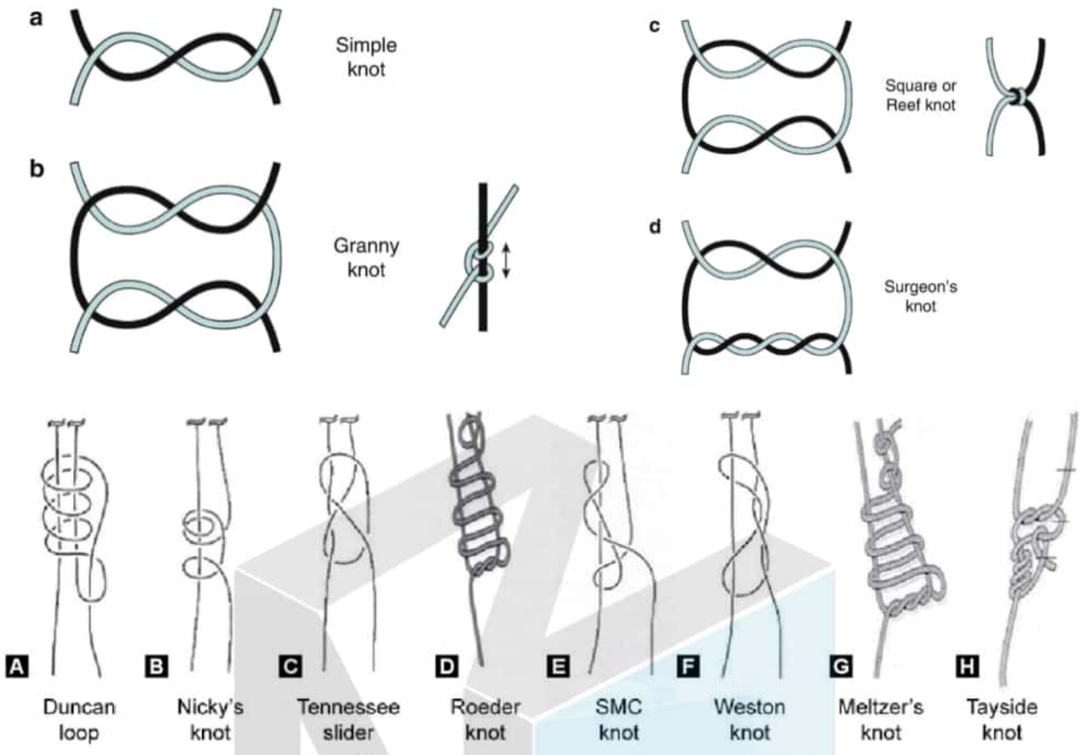
Surgical Blade

- 10, 15- Minor surgeries
- 22, 23- Major surgeries
- 15 – Stab-used in:
  - Incision & Drainage
  - Port creation
  - Venotomy
  - Drain fixation



Surgical knots:

- **Can be open surgical knots or laparoscopic knots**
- **Basic types are:** Reef, Granny, Surgeon's & Aberdeen
- **Laparoscopic knots:** intracorporeal and extra corporeal



Figs 2A to H: Other common extracorporeal knots

Damage control surgery

- Principle: Control bleeding and infection
- Phases:
    1. Damage Control Sx
    2. ICU
    3. Definitive Sx
- Concept of Lethal triad:
    1. Acidosis
    2. Coagulopathy
    3. Hypothermia